Fig. 4a represents particle measurements taken with a series of measurements performed over a period of several months. These measurements represent the Prior Art method of power-down for the dry-etch process.

Fig. 4b represents particle count measured also over a period of several months, in this case using the power-down procedure of the invention.

IN THE CLAIMS

Please amend the claims as follows.

2. (Amended) The method of claim 1 wherein said dry-etch chamber is of an Inductive Coupled Plasma (ICP) variety, said dry-etch chamber having a holding member with a surface which holds wafers or masks to be etched and an enclosing member which encloses the holding member to form a chamber for plasma, whereby plasma agitation occurs by an rf coil arrangement surrounding said enclosing member, whereby said rf coil arrangement produces a large voltage change near the enclosing member thereby enabling cleaning of the enclosing member by the plasma, whereby furthermore plasma gasses can continuously be

A6 cont'd.

removed from said enclosing member by means of a suction pump arrangement attached to said enclosing member.

A7

7. (Amended) The method of claim 1 wherein said following a dry etch chamber power-down procedure is a power-down procedure whereby rf power supplied to an Inductive Coupled Plasma (ICP) coil is gradually reduced in a sequence of six steps, each of said six steps to be executed as part of a sequence and without time interruption, each step immediately following a preceding step in numerical sequence, whereby a time during which Reactive Ion Etching (RIE) is applied varies and is adjusted in accordance with a step within the sequence, wherein said steps are identified as step 1 through step 6.

8. (Amended) The method of claim 7 wherein processing conditions for said step 1 are specified as 30 mt/600 w ICP/15 w RIE/30 sccm O_2/2.5 min.

9. (Amended) The method of claim 7 wherein processing conditions for said step 2 are specified as 30 mt/560 w ICP/15 w RIE/30 sccm O_2/30 sec.

10. (Amended) The method of claim 7 wherein processing

conditions for said step 3 are specified as 30 mt/520 w ICP/15 w RIE/30 sccm O_2/30 sec.

11. (Amended) The method of claim 7 wherein processing conditions for said step 4 are specified as 30 mt/480 w ICP/15 w RIE/30 sccm O_2/30 sec.

A1 Cont'd.

12. (Amended) The method of claim 7 wherein processing conditions for said step 5 are specified as 30 mt/440 w ICP/15 w RIE/30 sccm O_2/30 sec.

13. (Amended) The method of claim 7 wherein processing conditions for said step 6 are specified as 30 mt/400 w ICP/15 w RIE/30 sccm O_2/30 sec.

14. (Amended) The method of claim 7 wherein said six step power down procedure is modified to a sequence of N steps, wherein N is a whole integer number other than zero, processing conditions for each consecutive step are specified as 30 mt/AA w ICP/15 w RIE/30 sccm O_2/30 sec., wherein said AA w ICP represents a value of applied power for consecutive steps within said sequence, said applied power to decrease concurrent with increases in a value of N and whereby said applied power varies from an initial high value to a final low value, whereby said incremental

numbers may or may not be multiples of AA/N and whereby furthermore said initial high and final low values are experimentally determined and optimized for each dry-etch chamber power down procedure.

A1 Cont'd

15. (Amended) The method of claim 1 wherein said following a dry-etch chamber power-down procedure is a power-down procedure whereby rf power supplied to an Inductive Coupled Plasma (ICP) coil is reduced in a sequential and controlled manner during an time of a cleaning process of said dry-etch chamber, whereby at all times during said time there is a one-to-one relationship between rf power supplied to an Inductive Coupled Plasma (ICP) coil and time of a cleaning cycle, said relationship being defined by a specific mathematical equation.

16. (Amended) Providing a method of reducing particle count at the end of Power-down for an Inductive Coupled Plasma (ICP) dry-etch cleaning chamber, comprising the steps of:

providing a ICP dry-etch cleaning chamber;

positioning a workpiece within said cleaning chamber; and

following a dry-etch chamber power-down procedure, whereby said power-down is a six step power-down procedure, whereby said six steps of said power-down procedure follow in a given sequence and without interruption or time-lag in between any of

said six steps, and whereby step 1 is specified as 30 mt/600 w ICP/15 w RIE/30 sccm O_2/2.5 min., whereby further step 2 is specified as 30 mt/560 w ICP/15 w RIE/30 sccm O_2/30 sec., whereby further step 3 is specified as 30 mt/520 w ICP/15 w RIE/30 sccm O_2/30 sec., whereby further step 4 is specified as 30 mt/480 w ICP/15 w RIE/30 sccm O_2/30 sec., whereby further step 5 is specified as 30 mt/440 w ICP/15 w RIE/30 sccm O_2/30, whereby further step 6 is specified as 30 mt/400 w ICP/15 w RIE/30 sccm O_2/30 sec.

A7 Cont'd.

17. (Amended) The method of claim 16 wherein said six step power down procedure is modified to a sequence of N steps, wherein N is a whole integer number other than zero, where processing conditions for each consecutive step are specified as 30 mt/AA w ICP/15 w RIE/30 sccm O_2/30 sec, wherein said AA w ICP represents a value of applied power for the consecutive steps within said sequence, said applied power to decrease concurrent with increases in a value of N, whereby said applied power varies from an initial high value to a final low value.

18. (Amended) The method of claim 16 wherein said following a dry-etch chamber power-down procedure is a power-down procedure whereby rf power supplied to an Inductive Coupled Plasma (ICP) coil is reduced in a sequential and controlled manner during

time of a cleaning process of said dry-etch chamber, whereby at all times during said time there is a one-to-one relationship between rf power supplied to the ICP coil and time of a cleaning cycle.

A1 cont'd.

19. (Amended) The method of claim 16, said dry-etch chamber having a holding member with a surface which holds wafers or masks to be etched and an enclosing member which encloses the holding member to form a chamber for a plasma, whereby plasma agitation occurs by an rf coil arrangement surrounding said enclosing member, whereby said rf coil arrangement produces a large voltage change near the enclosing member thereby enabling cleaning of the enclosing member by the plasma, whereby furthermore plasma gasses can continuously be removed from said enclosing member by means of a suction pump arrangement attached to said enclosing member.

IN THE DRAWINGS

The drawings have been amended as kindly suggested by Examiner, a copy of the updated drawings is attached.